

Risk Factors of Adenomyosis: A Case Control Study in a Tertiary Care Hospital of Assam, India

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Abstract:- Adenomyosis is categorized under Non inflammatory disorder of the Female Genital tract in ICD-10 classification. It is defined as the benign invasion of endometrium into the myometrium, producing a diffusely enlarged uterus which microscopically exhibits ectopic non-neoplastic, endometrial glands and stroma surrounded by the hypertrophic and hyperplastic myometrium. As most of the women with adenomyosis will end up undergoing hysterectomy which have long term complication in quality of life, therefore a better understanding regarding the etiopathogenesis including the associated risk factors will help us in prevention and control of Adenomyosis. So this case control study was carried out to find out the risk factors of Adenomyosis. **Methodology:** A case control study with an sample size of 60,30 cases and 30 control. **Results:** There was no statistical association between age, parity, History of abortion, previous surgical history and smoking with adenomyosis. **Conclusion:** Our study showed no association of the commonly known risk factors of Adenomyosis.

Keywords:- Adenomyosis, Risk Factor, Case Control.

I. INTRODUCTION

According to ICD-10 classification Adenomyosis is classified under Non Inflammatory disorders of Genital Tract with code N80, specifically N80.0^[1]. It is an endometriosis of the uterus as it is the aberrant location of the endometrium inside the uterine Myometrium. Historically it was first referred as adenomyoma by German pathologist Carl von Rokitansky in the year 1860. One of the most appropriate definition of Adenomyosis was given by Bird in 1972 as “Adenomyosis may be defined as the benign invasion of endometrium into the myometrium, producing a diffusely enlarged uterus which microscopically exhibits ectopic non-neoplastic, endometrial glands and stroma surrounded by the hypertrophic and hyperplastic myometrium^[2] Few years back Adenomyosis was some sort of surgical diagnosis given after the Histopathological examination, but with modern imaging technique the spectrum of diagnostic tool has increased and improved. Now non invasive techniques like Trans Vaginal Sonography(TVS) and MRI are more sensitive than before in diagnosing Adenomyosis. As one of the most effective treatments of Adenomyosis is Hysterectomy so a better understanding of the etiopathogenesis of the disease may help us in avoiding such operation. A better understanding

regarding the risk factors of diseases will always make the diagnostic and treatment strategies more effective.

A systematic review of Long term impact of Hysterectomy of literatures published between 2005 to 2020 showed that hysterectomy may increase the risk of cardiovascular events, certain cancers, the need for further surgery, early ovarian failure and menopause, depression, and other outcomes^[3]. So preventing the disease in its early stage will help us in avoiding such strategies which have long term consequences. The prevalence of Adenomyosis among hysterectomy patients is highly variable from as low as 8.8% up to 56.6%. On TVS around 20.9% prevalence of adenomyosis was reported by Upson et al among symptomatic gynaecological patients attending Gynaecological clinic in United Kingdom^[4] In India one of the studies reported 16% prevalence of Adenomyosis among patients undergoing hysterectomy in a Tertiary Care Hospital of Kerala^[5]. Some of the already known risk factors of Adenomyosis like older Age(4th or 5th decade of life), Multiparity, History of Prior Uterine surgery, Smoking, Depression and Tamoxifen treatment^[6] but there is lack of research giving higher evidence of association of such risk factors with Adenomyosis, therefore this study was carried out to evaluate the risk factors of Adenomyosis among women attending Gynecological OPD in a tertiary care Hospital.

II. METHODOLOGY

Study Design: Case Control Study

Sample Size: A purposive sample size of 60 participants were included in the study 30 cases & 30 Controls, Cases and control were selected from patients and screened by TVS and inducted consecutively till the sample size of 60 was attained.

Study Period: 6 months May to October 2022.

Study Area: OPD at O&G Department, Gauhati Medical College

Cases: Patients at Gynaecology OPD of GMC who were advised a Trans vaginal USG (TVS) for further evaluation of their disease. Selection of cases were done from those screened patients who had any one of the following findings on TVS. 1) Indistinct endo-myometrial junction; (2) asymmetry of the anterior and posterior myometrium; (3)

myometrial striations; (4) myometrial cysts and fibrosis (5) heterogeneous myometrial echotexture (6)enlarged globular uterus .

Exclusion: Who did not give their consent for the study.

Control: OPD patients who after TVS did not show the features of Adenomyosis were selected as control.

Study Variables: Age, Marital status, Parity, Abortion, Previous Surgical History, presenting Symptoms. Data were collected in pre tested predesigned Profoma and later on compiled in MS excel sheet for Analysis. A p value of ≤ 0.05 was taken to be significant and Graph Pad Instat was used for statistical calculation. For continuous values T test was done and for Qualitative value evaluation Chi square and Fisher's Exact test was done.

Ethical clearance was taken from the Institutional Ethics Committee

A total 60 participants were analyzed, 30 cases & 30 controls. Mean Age of all the 60 participants was $37.7(\pm 9.03)$ years and Mean parity was $2(\pm 1.5)$ years (table 1).The mean age of both Cases and controls was similar, most of them in their 3rd decade of life. There were no variation in the distribution of Religion, almost half of the population belongs to Hindu and remaining half were Muslim, no patients were from other religions. Around 15% of the patients were Illiterate i.e. they could not read and write when one standard paragraph was shown and dictated to them.

On statistical analysis none of the factors showed a significant association with Adenomyosis (Table 2).The patients who gave a positive history of previous uterine surgery almost more than 90% of them gave their Surgical History as Caesarian Section. There was no significant association of Adenomyosis with smoking & abortion. The various chief complaints of both the study groups were Dysmenorrhea, Abnormal Uterine Bleeding, Pain Abdomen, etc.

III. RESULTS

Table 1: Baseline Characteristics Of the cases & Controls

Characteristics	Cases (%)	Control (%)	Total(n=60)
Mean Age(in years)	36.9 $\pm$ 10.3	36.1 $\pm$ 9.4	37.7($\pm$ 9.03).
Religion			
Hindu	16(53.5)	13(43.5)	29
Muslim	14(46.5)	17(56.5)	31
Se status			
Below poverty line	18(60)	23(76.5)	41
Above poverty line	12(40)	7(33.5)	19
Education status			
Illiterate	6(20)	3(10)	9
Literate	24(80)	27(90)	51
Total	30	30	60

Table 2: Showing association of the probable risk factors of Adenomyosis.

Table 2: Showing association of the probable risk factors of Acanthamoebiasis.			
Characteristics	Cases (%)	Control (%)	Statistical Test
Mean Age(in years)	36.9±10.3	36.1±9.4	On t test P >0.05
Mean Parity	1.73±1.1	2.1±1.8	On t test P >0.05
History of Uterine Surgery			
Yes	19(63.5)	14(46.5)	X ² =1.07,P>0.05 OR=1.9(0.07-5.5)
No	11(36.5)	16(53.5)	
Abortion History			
Yes	12(40)	9(30)	X ² =0.65,P>0.05 OR=1.5(0.53-4.5)
No	18(60)	21(70)	
Smoking History			
Yes	2(6.5)	0(0)	On Fisher’s Exact test, P>0.05,0R=5.35(0.24-116.4)
No	28(93.5)	30(100)	
Total	30(100%)	30(100%)	

IV. DISCUSSION

In our study there was no association of any the factors which were evaluated, one study reported a association of older age with Adenomyosis^[6] but similar to our finding Bergholt et all also reported that there was no association adenomyosis with age, parity, indication of hysterectomy, pain related symptoms or number of myometrial samples except

presence of Endometrial hyperplasia which was significantly associated with an Odds ratio of 3(1.2-8.3)^[7]. The association of age with adenomyosis may be due to their study population which was Hysterectomy patients which was often done on older age group. Shrestha A et all in a cross sectional study found a significant association (p<0.05) of adenomyosis when comparing between Nullipara and Multiparous women also there was a significant association with smoking history of

more than 10 years with an Odds Ratio of 3.6^[8] but in our study there was no association between smoking and adenomyosis which may be due to low prevalence of smoking in this part of India and only two cases gave the history of smoking that was also for less number of years. Garcia et al in her retrospective evaluation of 428 patients who underwent hysterectomy found significant association between Parity and Previous history of Dilation & curettage with adenomyosis, but similar to our findings there was no association with Age and Smoking status^[9]. In contrast to our study finding one more study found a significant association of Adenomyosis with parity and History of abortion in a cross sectional study of 707 patients undergoing hysterectomy in Italy by Parazzini et al^[10]. Therefore there was high disparity of study findings in all those literature which further demands more research with bigger sample size preferably a population based prospective study.

V. CONCLUSION

Finally the findings of our study showed that there was no association of factors like Age, Parity, history of abortion & smoking with adenomyosis.

Conflict of Interest: No

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